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TITLE: Ethnic and Environmental Influence on Vitamin D  
Requirement in Military Personnel

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## **INTRODUCTION**

This is the first annual report with respect to the above-referenced award. Although the award was made as of 1 October 2001, authorization to proceed was not received from USAMRMC until 15 July 2002. Hence this report, although technically covering the first year of the award, describes work performed only from 15 July 2002 until submission of this report, i.e., a period of roughly only 2.5 months.

## **BODY OF REPORT**

Upon authorization to proceed, we began immediately to finalize the procedure manual and to recruit a project manager, one preferably of minority background with good community contacts. We ultimately selected Lisa Auberry-Adams and began immediately the process of having her complete the University IRB training program required of all personnel involved in human subjects' research. At the same time, the principal investigator and Jennifer Cavalieri (our unit's director of recruitment) began the process of recruitment of subjects for Experiment 2 (which measures subjects at the end of a summer of outdoor sun exposure and then again five months later after a winter of no significant sun exposure). We have just barely had time, in the few weeks available since authorization, to get this component launched. We also acquired an electronic skin color reflectance meter [SmartProbe 400, Innovative Measurement Solutions, Inc., Milford CT] to provide an objective, reproducible measure of the three principal contributors to skin tone and to the change therein induced by sun exposure. This instrument had to be calibrated, its reproducibility determined, and standard operating procedures for its use developed.

As of 30 September 2002 we have completed 38 of the first (i.e., late summer) visits for Experiment 2. (Second visits are scheduled for February 2003.) This number is just shy of our target of 40 participants and the shortfall is due to the shortage of time between authorization and the closing of the window of opportunity for enrolling summer workers. We will make up the difference in next year's work plan. The ratio and sex breakdown of the group enrolled so far is as follows:

	Non-Hispanic Caucasian	Hispanic	African-American	Other
Male	9	0	12	1
Female	6	1	8	1

For each of these subjects we have obtained the suite of specimens/measurements specified in the approved protocol, i.e., history of sun exposure by duration and clothing type; skin pigmentation (see above); calcium absorption efficiency; measurements of the full set of hormones regulating the calcium economy [i.e., PTH,  $1,25(\text{OH})_2\text{D}_3$ ,  $25(\text{OH})\text{D}$ ], as well as blood vitamin D levels themselves, urine calcium excretion, and bone densitometry.

Chemical analyses of the various hormone levels will be performed in batch mode during the -02 year of the award. Hence we have essentially no data to report as of the end of the ~2 month activity period.

**KEY RESEARCH FINDINGS**

None to date.

**REPORTABLE OUTCOMES**

None to date.

**CONCLUSIONS**

None to date.